

# Work Order ID 41275

June 26, 2009 10:36:39 AM



3. Bending  
19/08/2008 - scrap?  
Page 1

Item ID: D3391-021  
Revision ID: H  
Item Name: Fwd Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00  
Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:  
Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:  
QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3391	Rev H								

100



Skidtubes

0.00

Skidtubes

Memo

0.00

Skidtubes

Cut extrusion to 46.52 +0.010 -0.020

110



BENDING MACHINE - SKIDTUBES

0.00

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Bend as per Dwg D3391 Using Bend Prog 3391021

120



QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

SEE ATTACHED SHEETS

DP 8-8-19

# Work Order ID 41275

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Page 2

Item ID: D3391-021

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130



HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine as per Folio FA590 Rev. \_\_\_\_ & Dwg D3391 Rev. \_\_\_\_ ☐ Identify as  
D3391-1 ☐ 2-Debur

0.00

0.00

140



QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

150



Mill Conv

Conventional Milling Machine

CONVENTIONAL MILLING MACHINE

Memo

Drill X1 Aft cap as per Dwg D3391 .1875" dia

0.00

0.00

SEE ATTACHED SHEETS

# Work Order ID 41275

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Page 3

Item ID: D3391-021  
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Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00  
Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:  
Customer:

Reference:

Run Start



Stop



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160  QC Quality Control	QC2- Inspect parts off machine FAI/FAIB  Memo ✓	0.00  0.00							
170  QC Quality Control	QC8- Inspect parts - second check  Memo ✓	0.00  0.00							
180  Skidtubes Skidtubes	Skidtubes  Memo 1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size) (ONLY DRILL HOLES MARKED "A") 2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step 3-Open tow cap hole	0.00  0.00							

See ATTACHED sheets

# Work Order ID 41275

June 26, 2009 10:36:39 AM

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Item ID: D3391-021

Accept

Revision ID: H

Item Name: Fwd Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

200

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

See ATTACHED SHEETS

# Work Order ID 41275

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Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

220

0.00



Skidtubes

Skidtubes

Memo

0.00

1-instal spacers as per dwg D3391 A/R Magnabond 6398  
batch: M 115580 exp. date: 07-2011 cure time 12hrs. as per  
QSI015 2- grind crossbolt flush 3-back drill crossbolt if necessary

DP 10-12-6

230

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

See ATTACHED SHEETS

240

0.00



White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

Powdercoat

Memo

0.00

Powder Coating

START TIME: 3:25 OVEN TEMPERATURE:  
300 FINISH TIME: 3:55

1 10-12-13

PTO =>

W/O: 41275		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
10/12/13	231	Pressure WASH & Reallocate AS Per PAR 09-042	HL	10/12/13	X1		

Part No: D3391-021 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Work Order ID 41275

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Item ID: D3391-021  
Revision ID: H  
Item Name: Fwd Tube Assembly

Accept

Setup Start

Stop

Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: Date:

Tooling: Date:

Run Start

Stop

QC: Date:

SPC (Y/N): Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

250

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

255

Hand finishing assemble per drawing => 10/12/11

260

Identify as per dwg & Stock Location:

0.00



Packaging

Memo

0.00

Packaging

270

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

\*\*\*\* install D3591-1 spacer as per DSI9364 \*\*\*\*

See ATTACHED SHEETS

# Work Order ID 41275

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Item ID: D3391-021  
Revision ID: H  
Item Name: Fwd Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:  
QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

10/12/16

ME  
10/12/16



# Picklist Print

June 26, 2009 10:36:38 AM

Page 1

Work Order ID: 41275

Parent Item: D3391-021RevH

Parent Item Name: Fwd Tube Assembly










Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ AELS-1032-225 		Purchased	No			100	Each	0.0000	10.0000			
✓ INSERT D6013-047RevA 		Manufactured	No			220	Each	0.0000	1.0000			
✓ Skidtube Material AELS-1032-130 		Purchased	No			260	Each	0.0000	2.0000			
✓ INSERT AN3C4A 		Purchased	No			260	Each	0.0000	10.0000			
✓ BOLT AN960C10L 		Purchased	No			260	Each	0.0000	10.0000			
✓ washer D3401-041RevB 		Manufactured	No			260	Each	0.0000	1.0000			
✓ Tow Cap Assembly D3564-13RevD 		Manufactured	No			260	Each	0.0000	1.0000			
✓ Wearshoe D3566-13RevC 		Manufactured	No			260	Each	0.0000	1.0000			
✓ Gasket D3670-4-200RevA 		Manufactured	No			260	Each	0.0000	4.0000			
SPACER												

B57349

④ DP 10-12-6

# Picklist Print

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Page 2

Work Order ID: 41275

Parent Item: D3391-021RevH

Parent Item Name: Fwd Tube Assembly



Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

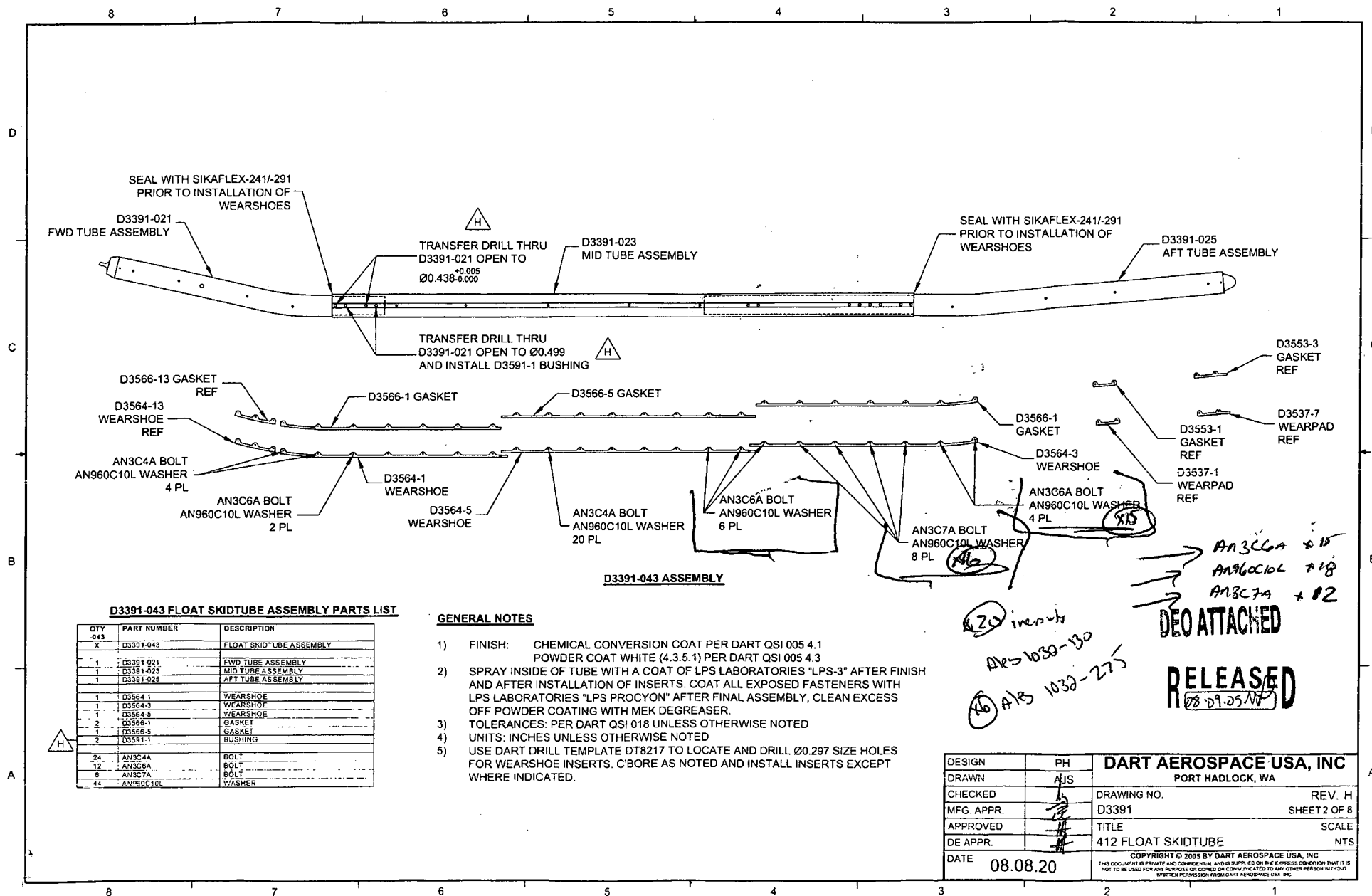
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ D3672-1RevB  Phenolic Washer		Manufactured	No			260	Each	0.0000	4.0000 			

June 26, 2009 10:36:38 AM

Shop Packet Print

Page 2





Date: Monday, 18/08/2008 10:22:27 AM  
 Job: Julie Lecocq

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services  
 Job Number : 41275  
 Estimate Number : 10467  
 P.O. Number :  
 This Issue : 18/08/2008 S.O. No. :  
 Prsht Rev. : NC  
 First Issue : / / Type : SKIDTUBES  
 Previous Run : 41274  
 Part Number : D3391021  
 Drawing Number : D3391 REV G  
 Project Number : N/A  
 Drawing Revision : G  
 Material :  
 Due Date : 08/09/2008 Qty: 1 Um: Each  
 Written By :  
 Checked & Approved By : JD 08.8.18  
 Comment : Est. A 05.09.13 New issue KJ/JLM  
 Est. B 06.02.10 Dwg rev.D ecn 773 EC  
 Est. C 06.05.02 Added inspections EC  
 est D 07.03.13 rev F dwg EC  
 est E 07.11.07 revG dwg ecn1053P EC verified by: DD  
 Est Rev.f ECN 1056 07-11-12 DD verified by: EC

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D6013047 Skidtube Material



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

SKIDTUBE MAT'L

Pick:

Qty Part Number Description Batch

1 D6013-047 Extrusion

Batch

B-26547

AWM

8-8-18

2.0 SKIDTUBES 1 SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Cut extrusion to 46.52 +0.010 -0.020

AWM

8-8-18

3.0 BENDING BENDING MACHINE - SKIDTUBES



Comment: No bender

Bend as per Dwg D3391 Using Bend Prog 3391021

8-8-19

4.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

DP

8-8-19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 18/08/2008 10:22:27 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 41275

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine as per Folio FA590 Rev. AA & Dwg D3391 Rev. G

Identify as D3391-1

2-Deburr

*DJP 08/09/04*

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

*DJP 08/09/04*

7.0

MILLING CONV.

CONVENTIONAL MILLING MACHINE



Comment: CONVENTIONAL MILLING MACHINE

Drill X1 Aft cap as per Dwg D3391 .1875" dia

*SL 10/04/04*

8.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

*SL 10/04/08*

9.0

QC8

SECOND CHECK



Comment: SECOND CHECK

*LF 10/04/04*

10.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)  
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5-Deburr & Scribe Batch number Inside aft end.

6-Transfer drill D3391-021 with D3391-023

*BE 10/12/01*

*BE 10/04/30*

H:\FORMS\Quality Assurance

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3391-021 PAR #:            Fault Category: Skid tubes NCR ☒ Yes No DQA:            Date: 10/12/20  
Accepted / Use as is. QA: N/C Closed:            Date: 10/12/20

NCR: <u>41275</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
8/1/15		cut out for inner Ridge is 0.720" instead of 0.687". Also a notch is fainter key way	CP 10.03.16 05/04/2	Build out mark.  Acceptable. Insignificant effect on strength	DP 10-12-1	5 10/12/16	CP 10.03.16 05/04/2	C 09/15
		R.C. Part wasn't sitting flat During 2nd op. of machining. operator inexperience	CP 10.03.16				CP 10.03.16	

NOTE: Date & initial all entries



Date: Monday, 18/08/2008 10:22:28 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 41275

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8/12/12/12

8

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

DP 10-12-2

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

BE 10/12/06 ①

14.0

D36704200

SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

SPACER

batch: B51349

④ DP 10-12-6

15.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-instal spacers as per dwg D3391

A/R Magnabond 6398 batch: M115580

exp. date: 02-2011

cure time 12hrs. as per QSI015

DP 10-12-6

2- grind crossbolt flush

3-back drill crossbolt if necessary

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8/12/13

17.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M115951.

START TIME: 3:25

OVEN TEMPERATURE: 300

FINISH 3:55

DP 10-12-13.

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Monday, 18/08/2008 10:22:28 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 41275

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

FINISH TIME:

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

HL 10/12/14

19.0

ALS41032130

Insert



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

INSERT

batch: 1116049

or equivalent

per QSI 017

HL 10/12/14

20.0

ALS41032225

Insert



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

INSERT

batch: 1110768

or equivalent

per QSI 017

HL 10/12/14

21.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per Dwg

HL 10/12/14

x1

22.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

HL 10/12/14

23.0

D3401041

Tow Cap Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Tow Cap Assembly

Pick:

Qty

Part Number

Description

Batch

1

D3401-041

Tow Cap

B46029

HL 10/12/14

## WORK ORDER CHANGES

PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Monday, 18/08/2008 10:22:28 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 41275

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

D356413

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
WEARSHOE

B60862

HL 10/12/14

25.0

D356613

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
GASKET

B60209

HL 10/12/14

26.0

D36721

Phenolic Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
PHENOLIC WASHER

B52505

HL 10/12/14

27.0

AN3C4A

BOLT



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)  
Bolt  
Pick:

Qty

Part Number

Description

Batch

4

AN3C4A

Bolt

M115936

HL 10/12/14

28.0

AN960C10L

WASHER

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)  
washer

M115832

HL 10/12/14

29.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1  
Install tow Cap as per Dwg D3391  
Identify as D3391-021

HL 10/12/14

30.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP  
Inspect thread of each insert using DT8821

HL 10/12/14

## WORK ORDER CHANGES

PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Monday, 18/08/2008 10:22:28 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 41275

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

31.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

10/12/1588

PJ2

32.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
		Add hardware in pick kit: AN 3C6A x 15 B# _____ NAS1149CG332R x 18 B# _____ AN 3C7A x 12 B# _____					
		ALS4-1032-130 x 20 B# _____ ALS4-1032-225 x 10 B# _____					

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

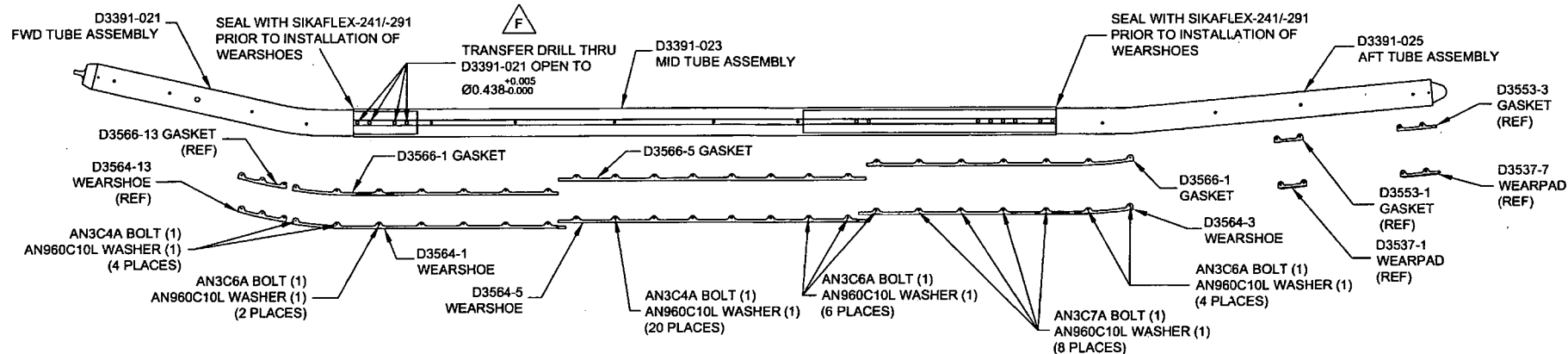
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries









**D3391-043 ASSEMBLY**

**RELEASED**  
07.11.97

**D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

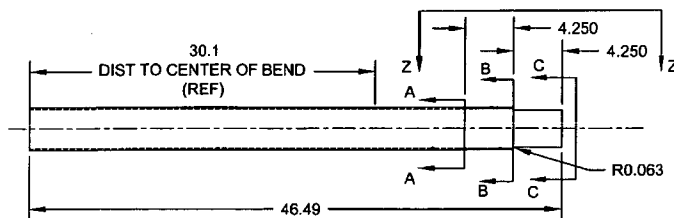
QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

**GENERAL NOTES**

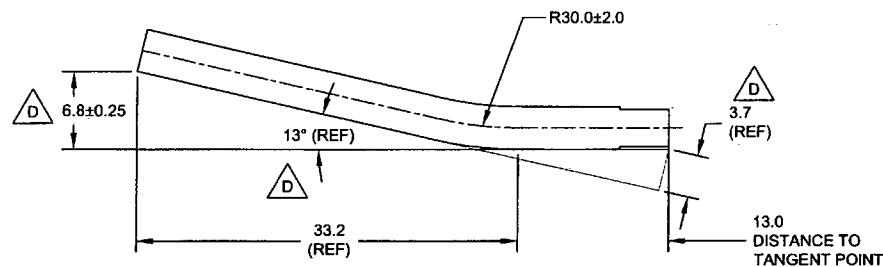
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

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MFG. APPR.	DATE	D3391	SHEET 2 OF 8
DE APPR.		TITLE	SCALE
		412 FLOAT SKIDTUBE	NTS
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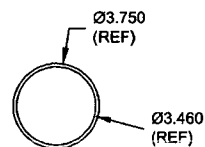
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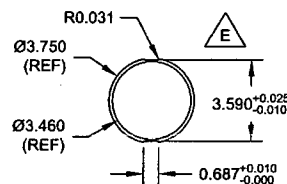
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



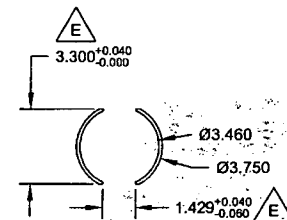
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



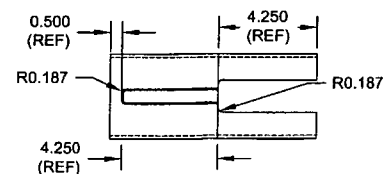
**SECTION A-A**  
(SCALE 1:5)



**SECTION B-B**  
(SCALE 1:5)



**SECTION C-C**  
(SCALE 1:5)

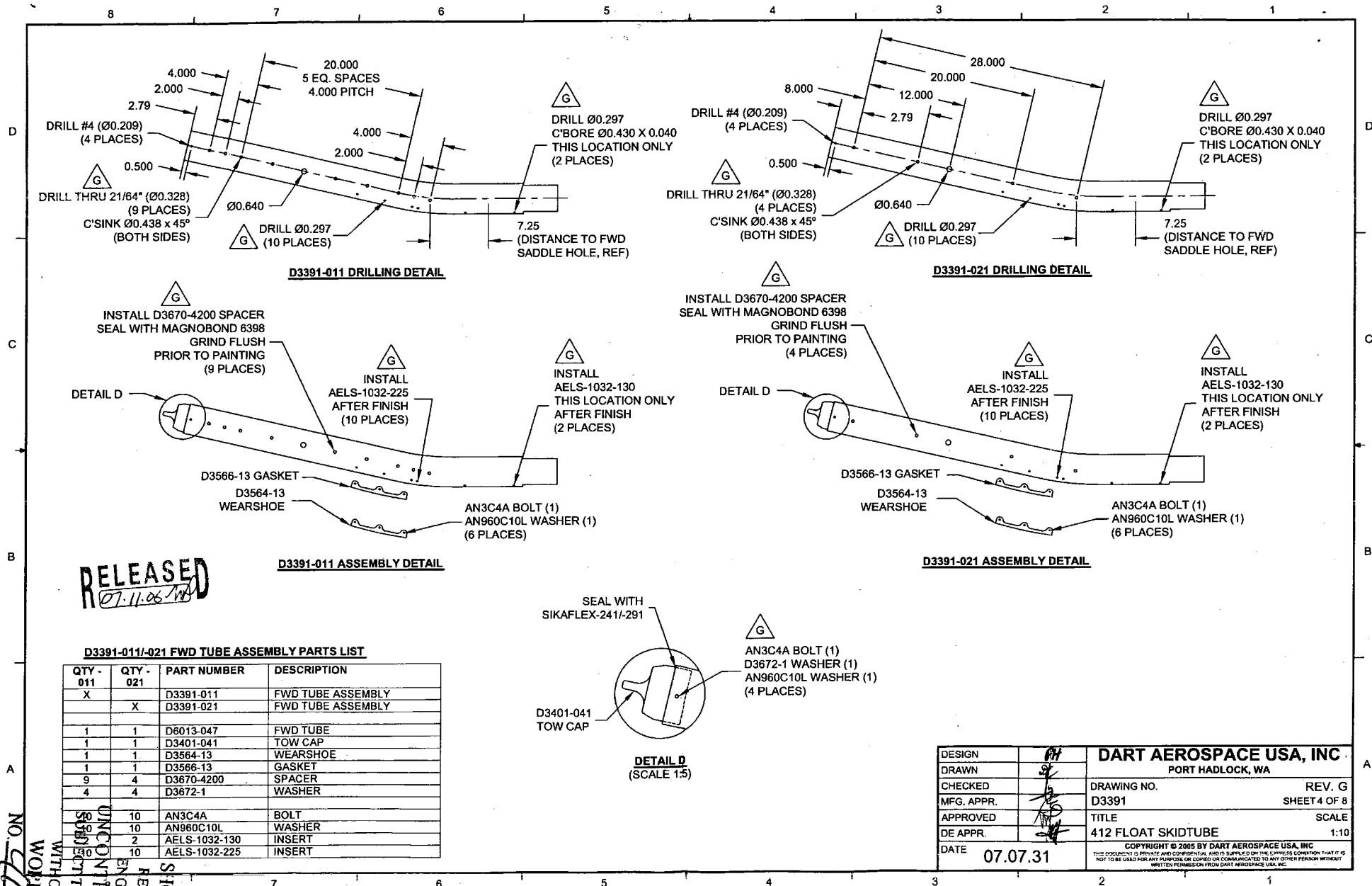


**VIEW Z-Z**  
(SCALE 1:5)

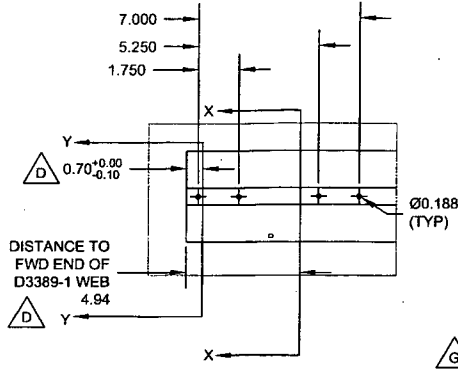
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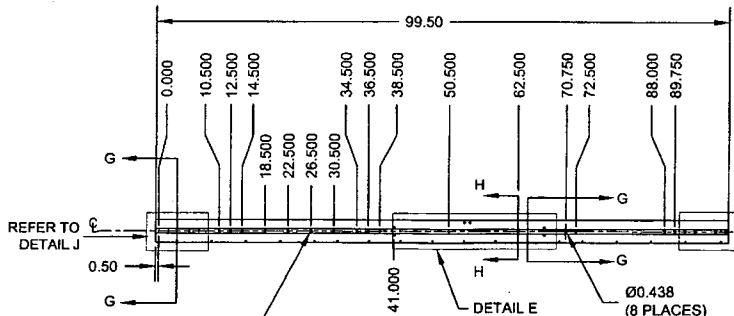
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MFG. APPR.		SHEET 3 OF 8	
APPROVED		TITLE SCALE	
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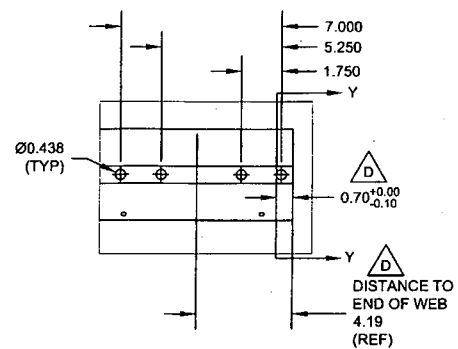
8 7 6 5 4 3 2 1



**DETAIL J**  
(SCALE 1:5)



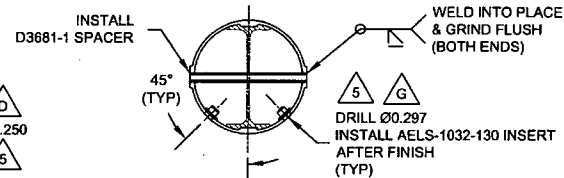
**D3391-013 ASSEMBLY DETAIL**



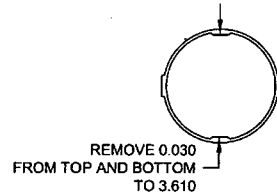
**DETAIL K**  
(SCALE 1:5)



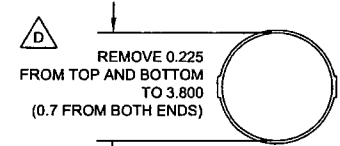
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(SCALE 1:4)



**SECTION H-H**  
(SCALE 1:4)

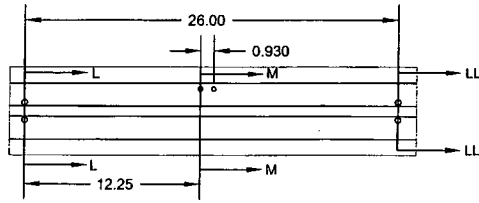


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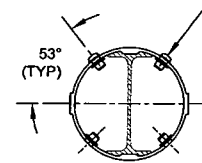


**SECTION Y-Y**  
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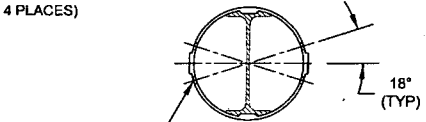
DRILL Ø0.297  
INSTALL AELS-1032-130 INSERT  
MS27039C1-09 SCREW  
D3672-1 WASHER  
AN960C10L WASHER  
AFTER FINISH  
(TYP 4 PLACES)



**DETAIL E**  
(SCALE 1:8)



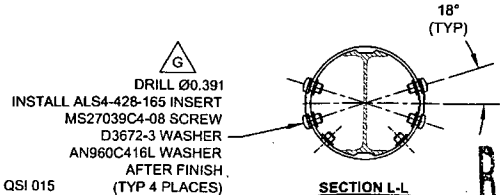
**SECTION M-M**  
(SCALE 1:4)



**SECTION LL-LL**  
(SCALE 1:4)

**D3391-013 MID TUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
12	D3681-1	SPACER
4	D3672-1	WASHER
4	D3672-3	WASHER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



**SECTION L-L**  
(SCALE 1:4)

DRILL Ø0.391  
INSTALL ALS4-428-165 INSERT  
MS27039C4-08 SCREW  
D3672-3 WASHER  
AN960C416L WASHER  
AFTER FINISH  
(TYP 4 PLACES)

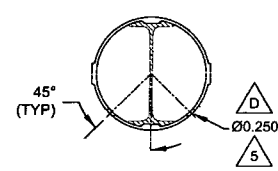
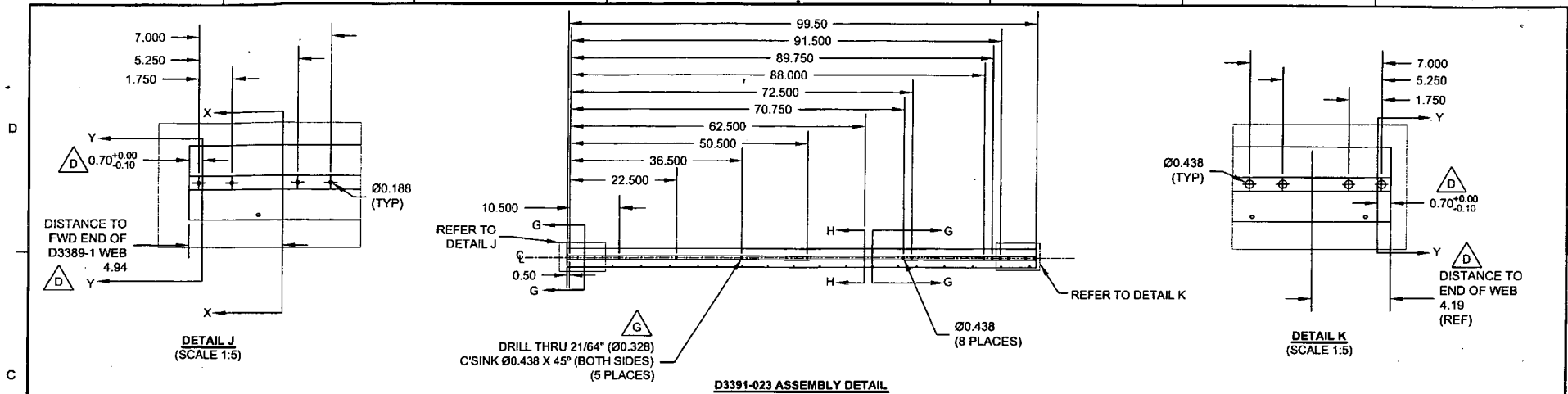
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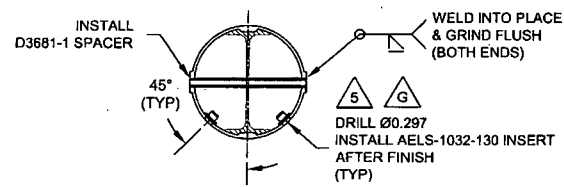
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D3391	SHEET 5 OF 8
TITLE	SCALE
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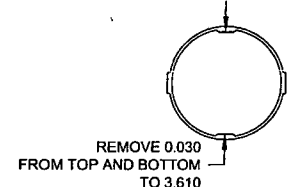
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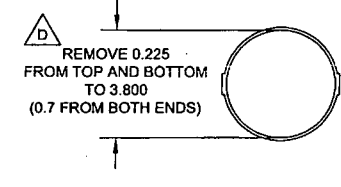
SECTION G-G  
(SCALE 1:4)



SECTION H-H  
(SCALE 1:4)



SECTION X-X  
(SCALE 1:4)



SECTION Y-Y  
(SCALE 1:4)

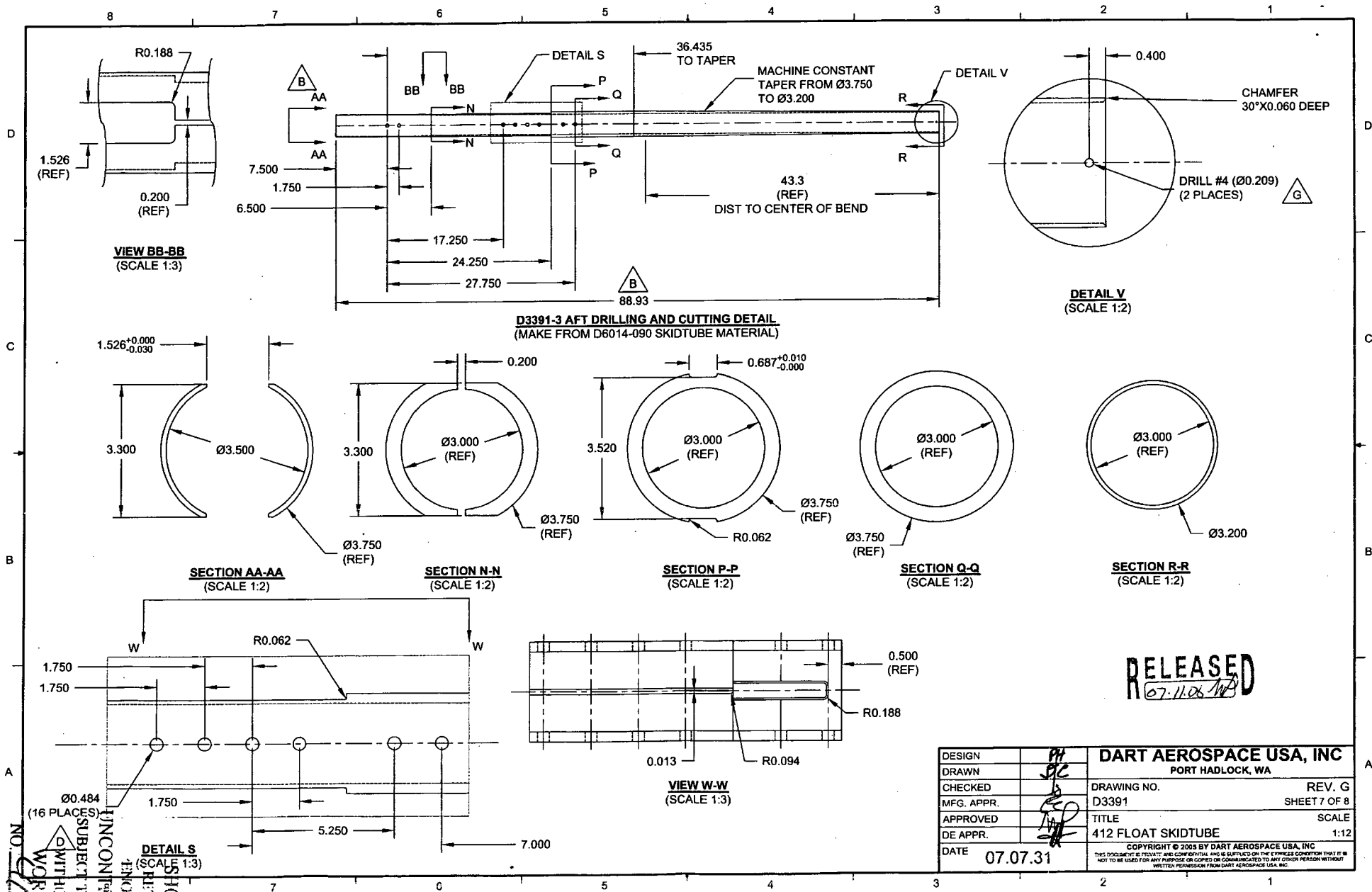
**D3391-023 MID TUBE ASSEMBLY PARTS LIST**

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

RELEASED  
07.11.06/11

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APPROVED	DE	412 FLOAT SKIDTUBE	1:20
DE APPR.	DE	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC.	
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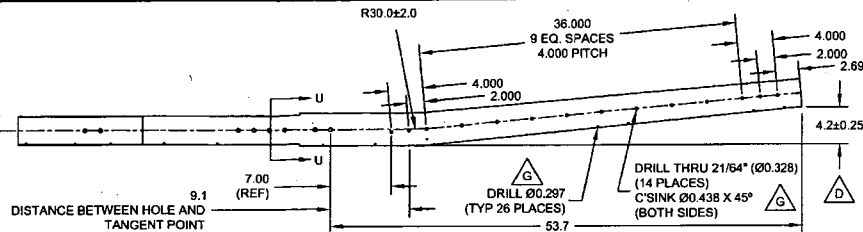


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MFG. APPR.	JP	D3391 SHEET 7 OF 8
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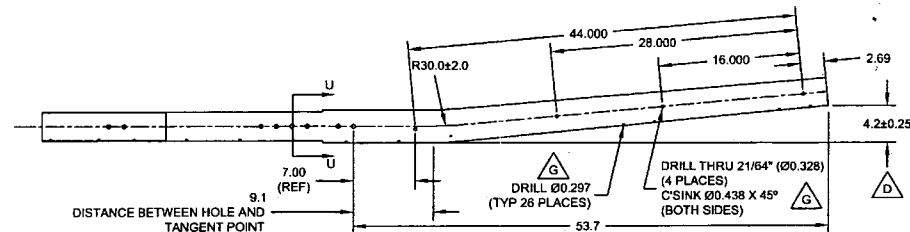
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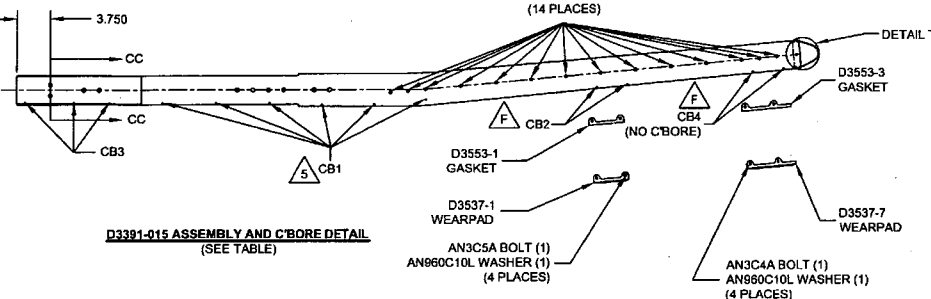
**D3391-015 BENDING AND DRILLING DETAIL**  
(SEE C'BORE DETAIL BELOW)

INSTALL D3670-4200 SPACER  
SEAL WITH MAGNOBOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
(14 PLACES)

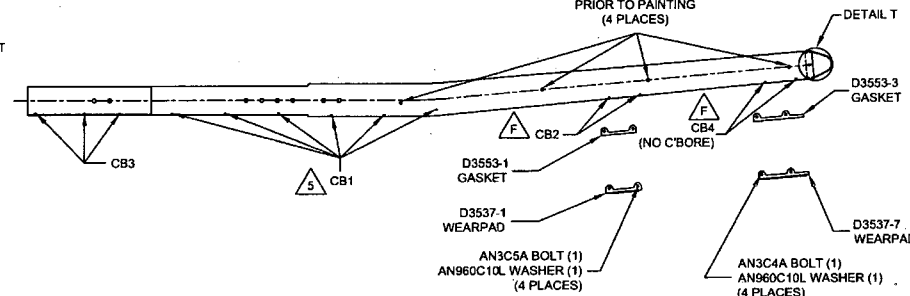


**D3391-025 BENDING AND DRILLING DETAIL**  
(SEE C'BORE DETAIL BELOW)

INSTALL D3670-4200 SPACER  
SEAL WITH MAGNOBOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
(4 PLACES)

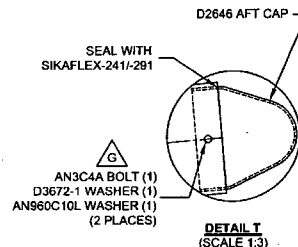
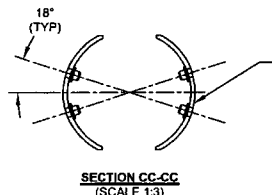
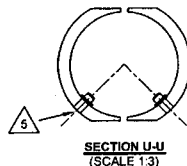


**D3391-015 ASSEMBLY AND C'BORE DETAIL**  
(SEE TABLE)



**D3391-025 ASSEMBLY AND C'BORE DETAIL**  
(SEE TABLE)

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4	4	ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER



**RELEASED**  
07.11.06

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND  
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	C'BORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>
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DE APPR.	SLC	TITLE 412 FLOAT SKIDTUBE
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# Work Order Summary

November 6, 2009 11:59:01 AM

Page 1 of 1

Criteria : Work Order ID: 41275 Item ID: D3391-021RevH Product Family SKIDTUBES  
Work Order Start Dates 7/15/09 to 7/15/09 11:59:59 PM Work Order Required Dates 8/03/09 to 8/03/09  
11:59:59 PM

All References

Work Order Status Released

Work Order ID 41275 Required Qty 1.0000 Status Code Released  
Item ID D3391-021RevH Accepted Qty 0.0000 Scrap Qty 0.0000  
Item Name Fwd Tube Assembly  
Current Acct Value \$904.797 Sales Order ID

Start Date 7/15/09 Required Date 8/03/09 Completed Date  
Standard \*\* Actual \*\* \*\* Acct. Value \*\* \*\* Variance \*\* \*\* Variance % \*\*

Direct Costs	Total	Each	Each	Each	Each
Material	\$0.000	\$0.000	\$128.520	\$128.520	100.00%
Labor	\$58.432	\$0.000	\$0.000	\$0.000	0.00%
Outplant	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$187.328	\$0.000	\$0.000	\$0.000	0.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
** Total **	\$245.760	\$0.000	\$128.520	\$128.520	

## Work Center

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
ZWIP												
6/25/09												
N/A			0.00	0.00	58.54	58.54	1.00	\$0.000	\$58.540	\$187.328	\$0.000	\$245.86
N/A			0.00	0.00	-0.11	-0.11	1.00	\$0.000	-\$0.108	\$0.000	\$0.000	-\$0.10
Total:			0.00	0.00	58.43	58.43	2.00	\$0.000	\$58.432	\$187.328	\$0.000	\$245.76

# Picklist Print

Page 1

Thursday, December 16, 2010 8:46:47 AM

Work Order ID: 41275

Parent Item: D3391-021RevH

Parent Item Name: Fwd Tube Assembly

Start Date: 7/15/2009

Required Date: 8/3/2009

Start Qty: 1.00

Required Qty: 1.00

## Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty'	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	---------------	---------------	----------------	--------

ALS4-1032-130  
Insert

Purchased

No

Each 1,211.0000

10/12/10 20 SP

### Location

### Loc Qty

### Loc Code

PKG11

630

114723

630

ST281

446

116049

446

ST282

96

110511

10

115911

86

ST381

39

114654

39

ALS4-1032-225  
Insert

Purchased

No

Each 4,144.0000

10/12/10 10 SP

### Location

### Loc Qty

### Loc Code

PK011

4144

110768

4144

AN3C6A  
BOLT

Purchased

No

Each 280.0000

10/12/10 15 SP

### Location

### Loc Qty

### Loc Code

ST351

280

111982

205

116419

75

15

AN3C7A  
BOLT

Purchased

No

Each 190.0000

10/12/10 12 SP

### Location

### Loc Qty

### Loc Code

ST351

190

113149

81

114382

10

116169

99

12

# Picklist Print

Thursday, December 16, 2010 8:46:47 AM

Work Order ID: 41275

Parent Item: D3391-021RevH

Parent Item Name: Fwd Tube Assembly

Start Date: 7/15/2009

Required Date: 8/3/2009

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

Each

5,231.0000

12/12/10 18

Washer

Location

Loc Qty

Loc Code

ST297

5231

115000

125

115698

35

~~115832~~

71

116025

2000

116304

3000

18

